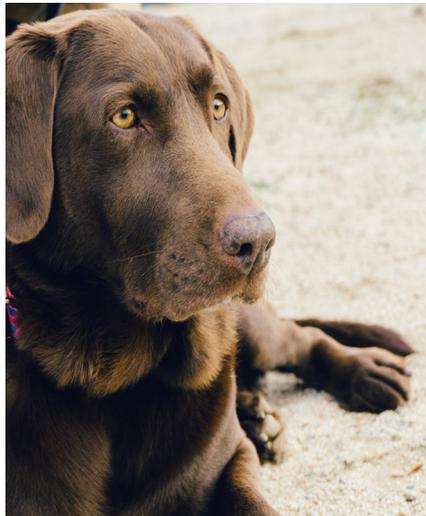


CANINE BRUCELLOSIS: INFORMATION FOR VETERINARIANS

Mississippi Board of Animal Health

11.01.2017

Canine Brucellosis in Mississippi



Brucellosis is caused by gram negative, non-motile, non-spore forming, intracellular bacteria of the family Brucellaceae. *Brucella canis* is endemic in the dog population with an estimated prevalence of 1-8% in the United States. Prevalence of the disease in the Mississippi dog population is unknown and is a current topic of research within the state.

Risk Factors and Transmission: Dogs in breeding programs, stray dogs that have not been spayed or neutered, and unowned or free-roaming dogs are at higher risk of having brucellosis. Transmission occurs most often through breeding or contact with vaginal discharges, semen, and birthing fluids. Bacteria may also be transmitted in blood, urine, milk, and saliva.

Clinical Signs: Infected dogs are often asymptomatic. Reproductive signs including aborted or stillborn puppies, infertility, and orchitis/epididymitis are most common. Other signs may include uveitis and neck or back pain due to discospondylitis. Routine blood work is often normal or shows only a mild leukocytosis, even during acute disease.

Zoonotic Risk: Although human cases of canine brucellosis are rare, veterinarians and dog breeders are at increased risk due to frequent contact with reproductive fluids. Symptoms in people are nonspecific and may include fever, headache, swollen lymph nodes, night sweats, joint and muscle aches, fatigue, weight loss, and hepatic or splenic enlargement.

Diagnostic Testing

Testing for brucellosis can be confusing and frustrating. Common tests include:

- ⇒ Serology: Rapid Slide Agglutination Test (RSAT), Tube Agglutination Test (TAT), Agar Gel Immunodiffusion (AGID)
- ⇒ Agent: Culture, PCR

Limitations

Testing individual dogs with current tests may result in false positives & negatives.

Dogs may take up to 6 weeks to develop antibodies, so suspect acute infections should have serological tests repeated.

Who to Test?

- Dogs with clinical signs
- Dogs entering a breeding kennel
- Intact dogs in the home or kennel where a positive dog was located
- Littermates of an infected dog
- Puppies from infected mothers or kennels

The RSAT Explained

The commercial rapid slide agglutination test (RSAT) detects *B. canis* antibodies. The test has a high rate of false positives, so dogs which test positive are usually retested with 2-mercaptoethanol (2-ME). This disassociates nonspecific IgM and improves test specificity, however, test sensitivity is decreased.

Test Interpretation:

RSAT +, 2-ME RSAT + : the dog has circulating antibody and is likely infected

RSAT +, 2-ME RSAT - : the RSAT result may be a cross-reaction with another gram negative bacteria or the dog may be early in the course of infection → repeat test in 4 to 6 weeks to differentiate

A positive in a kennel...

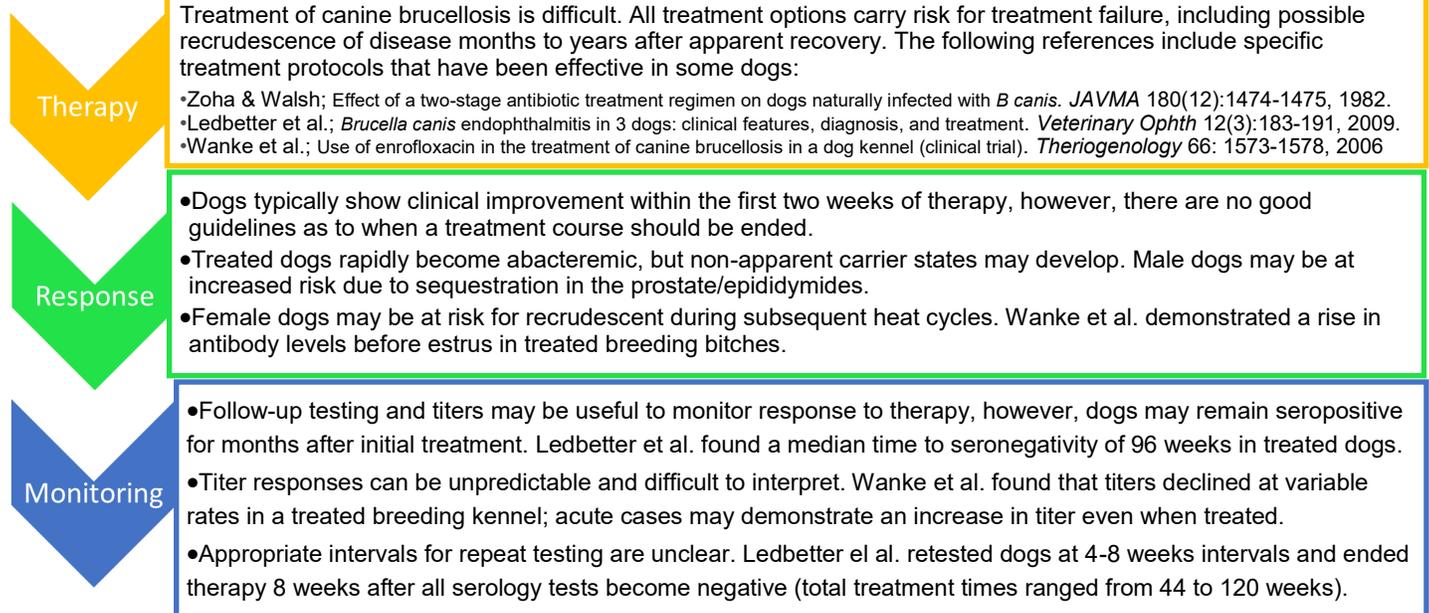
What next?

A positive serological test should be confirmed by culture and systematic testing of all dogs in the population. If brucellosis is found in the kennel, it is nearly impossible to distinguish infected from uninfected dogs and all should be considered potentially infected.

A negative test does not ensure a dog is uninfected!

CANINE BRUCELLOSIS

Treatment and Clinical Course of Disease



Prevention and Zoonotic Risk Reduction



Prevention in Dogs

Canine brucellosis is reportable to the State Veterinarian in Mississippi (601-359-1170)!

Breeding Kennels: Work with dog breeders to develop a preventive program to reduce risk of brucellosis and other infectious diseases. Plans should include: biosecurity measures to prevent introduction and disease spread, monitoring for any clinical signs of disease and isolation of sick animals, and a preventive medical plan including nutrition, diagnostic testing, vaccination and deworming schedules, and intra- and interstate movement policies.

Prevention in People

Reduce exposure: All bodily fluids from animals should be treated as potentially infectious. Many zoonotic agents including brucellosis, leptospirosis, and cryptosporidiosis may be present in commonly collected samples. Use of appropriate personal protective equipment, designated sample testing areas, and thorough disinfection protocols will reduce risk of exposure.

Recognize risks: Apply extra precautions to animals showing signs of illness. Follow good biosecurity practices including segregation, isolation, and decontamination. Bodily fluids from ill animals including blood, urine, birthing fluids, and fetal tissues should be treated as biological hazards. Prompt disinfection of contact surfaces and workers will reduce spread of disease.

React to unusual findings: Unexplained illness in a veterinary clinic worker or pet owner should raise suspicion of a possible zoonosis, especially if recent contact with an ill animal has occurred. Inform your physician of any concerns and seek prompt medical care.

For more information, contact: Mississippi Board of Animal Health, 601-359-1170, www.mbah.ms.gov.

Recommendations are adapted from the Canine Brucellosis and Foster-Based Rescue Dog Brochure by the Minnesota Department of Health and developed in conjunction with the Mississippi State University College of Veterinary Medicine